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10/760,120	01/16/2004	Jari Hiltunen	915-005.091	7356

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EXAMINER

CUTLER, ALBERT H

ART UNIT	PAPER NUMBER
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2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/760,120

Applicant(s)

HILTUNEN ET AL.

Examiner

Albert H. Cutler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is responsive to application 10/760,120 filed on January 16, 2004. Claims 1-17 are pending in the application and have been examined by the examiner.

Information Disclosure Statement

2. The Information Disclosure Statements (IDS) mailed on January 16, 2004 and June 24, 2004 were received and have been considered by the examiner.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

4. Claims 7 and 16 are objected to because of the following informalities: Lack of clarity and precision. Claims 7 and 16 recite that the camera module is arranged on the printed wiring board via "the frame structure". However, a frame structure is not recited in either claims 7 or 16, or parent claims 5 and 6. Please change claims 7 and 16 to read, "the camera module is arranged on the printed wiring board via a frame structure" in order to preserve clarity. Appropriate correction is required.

5. Claim 11 is objected to because of the following informalities: Lack of clarity and precision. Claim 11 recites an installation aperture on "the first side". However, a first side is not previously recited in claim 11. Please change claim 11 to read, "an installation aperture on a first side" in order to preserve clarity. Appropriate correction is required.

6. Claim 12 is objected to because of the following informalities: Lack of clarity and precision. Claim 12 recites that the contacts are "placed on at least the same side as the aperture". However, more than one aperture is defined in parent claim 11. Please amend claim 12 to clearly indicate the appropriate aperture. For examination purposes, the Examiner will interpret claim 12 to read, "placed on at least the same side as the **installation aperture**". Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyake et al.(U.S. Patent Application Publication 2002/0065102).

Consider claim 1, Miyake et al. teach:

A portable electronic device (figure 1), which comprises at least a camera module ("image pickup device", 1, figure 1, figures 2a and 2b. The camera module is comprised of a lens (103) and image sensor (101 and 101a).), which comprises at least an optics zone (See "casing", 102, paragraph 0039. The top portion of the casing in figures 2a and 2b, comprises the optics zone.), which comprises at least an input aperture (Lens, 103, is situated in the input aperture, paragraph 0039.) and a connector zone (The bottom portion of the casing, 102, forms the connector zone, see figures 2a and 2b.), which comprises at least contacts ("lead portion", 104, paragraph 0039) for connecting the camera module to counter-contacts (A circuit board, 2, is "electrically connected" to the lead portion of the image pickup device, 1, paragraph 0039. Because the circuit board is electrically connected to the image pickup device, the leads of the image pickup device must be connected to counter contacts.), and a printed wiring board (circuit board, 2, figures 1, 2a and 2b), which includes parallel first and second sides for placing the camera module (1) and other structures (see figures 1, 2a, and 2b), wherein the optics zone and the connector zone of the camera module (1) are settled on different sides of the printed wiring board (See figures 2a and 2b, the optics zone, with the lens (103), is settled on the top side of the printed wiring board (2) and the connector zone with the image sensor (101) and leads (104) is settled on the bottom (i.e. opposite) side.).

Consider claim 2, and as applied to claim 1 above, Miyake et al. further teach:

the printed wiring board(2) comprises at least an aperture("opening", 201, paragraph 0041) penetrating the printed wiring board(see figures 1, 2a, and 2b, paragraph 0041), and the optics zone of the camera module is placed at least partly inside said aperture(201) of the printed wiring board(see figures 2a and 2b).

Consider claim 3, and as applied to claim 1 above, Miyake et al. further teach:

the device comprises, in addition, at least a frame structure("casing", 102), which comprises at least contacts("lead portion", 104, paragraph 0039) for connecting the camera module(paragraph 0039), an aperture(The casing(102) is cylindrical(paragraph 0039), and forms an aperture that extends from the lens(103) to the image sensor(101), see figures 2a and 2b.), which is on the side placed against the printed wiring board in the frame structure(The bottom part of the aperture is on the side placed against the printed wiring board(2) in the frame structure(102), see figures 2a and 2b.), and the optics zone of the camera module is placed at least partly inside the aperture of the frame structure(The lens(103) is in the optics zone, and is placed partly inside the aperture of the frame structure(102), see figures 2a and 2b.).

Consider claim 4, and as applied to claim 1 above, Miyake et al. further teach that the device is arranged to transfer data in a wireless manner(The device is a "portable telephone", paragraph 0038.).

Consider claim 15, and as applied to claim 2 above, Miyake et al. further teach:

the device comprises, in addition, at least a frame structure("casing", 102), which comprises at least ("lead portion", 104, paragraph 0039) for connecting the camera module(paragraph 0039), an aperture(The casing(102) is cylindrical(paragraph 0039), and forms an aperture that extends from the lens(103) to the image sensor(101), see figures 2a and 2b.), which is on the side placed against the printed wiring board in the frame structure(The bottom part of the aperture is on the side placed against the printed wiring board(2) in the frame structure(102), see figures 2a and 2b.), and the optics zone of the camera module is placed at least partly inside the aperture of the frame structure(The lens(103) is in the optics zone, and is placed partly inside the aperture of the frame structure(102), see figures 2a and 2b.).

Consider claim 5, Miyake et al. teach:

A method for placing a camera module in a portable electronic device(paragraphs 0037-0043), wherein the camera module("image pickup device", 1, figure 1, figures 2a and 2b. The camera module is comprised of a lens(103) and image sensor(101 and 101a.), which comprises at least an input aperture(Lens, 103, is situated in the input aperture, paragraph 0039.) and a connector zone(The bottom portion of the casing, 102, forms the connector zone, see figures 2a and 2b.), is arranged on a printed wiring board(circuit board, 2, figures 1, 2a and 2b), where other structures of the device are also placed(See figure 1, an LCD(5) is also placed on the circuit board(2).), wherein the input aperture of the camera module settles on a different side of the printed wiring board than the connector zone(See figures 2a and 2b, the

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optics zone, with the lens(103), which is settled in the input aperture, is settled on the top side of the printed wiring board(2) and the connector zone with the image sensor(101 and 101a) and leads(104) is settled on the bottom(i.e. opposite) side.).

Consider claim 6, and as applied to claim 5 above, Miyake et al. further teach that at least a part of the camera module(1) is placed through the printed wiring board(2, see figures 1, 2a, and 2b).

Consider claim 7, and as applied to claim 6 above, Miyake et al. further teach: the camera module(1) is arranged on the printed wiring board(2) via a frame structure("casing", 102), and the printed wiring board(2) comprises at least an aperture("opening", 201, paragraph 0041) penetrating the printed wiring board(see figures 1, 2a, and 2b, paragraph 0041), and the frame structure(102) comprises at least an aperture(The casing(102) is cylindrical(paragraph 0039), and forms an aperture that extends from the lens(103) to the image sensor(101), see figures 2a and 2b.), on the side settling against the printed wiring board(The bottom part of the aperture is on the side settling against the printed wiring board(2) in the frame structure(102), see figures 2a and 2b.), and said apertures are placed one on the other in such a manner that the camera module can be placed at least partly inside the aperture of said printed wiring board and the aperture of said frame structure(The camera module(1), comprises a lens(103) and an image sensor(101) which are placed within both the aperture of the

frame structure(102) and the aperture(201) of the printed circuit board(2). The top and bottom portions of the aperture of the frame structure(102) are placed on the aperture(201) of the printed circuit board(2), see figure 2a and 2b.).

Consider claim 16, and as applied to claim 5 above, Miyake et al. further teach:

the camera module(1) is arranged on the printed wiring board(2) via a frame structure("casing", 102), and the printed wiring board(2) comprises at least an aperture("opening", 201, paragraph 0041) penetrating the printed wiring board(see figures 1, 2a, and 2b, paragraph 0041), and the frame structure(102) comprises at least an aperture(The casing(102) is cylindrical(paragraph 0039), and forms an aperture that extends from the lens(103) to the image sensor(101), see figures 2a and 2b.), on the side settling against the printed wiring board(The bottom part of the aperture is on the side settling against the printed wiring board(2) in the frame structure(102), see figures 2a and 2b.), and said apertures are placed one on the other in such a manner that the camera module can be placed at least partly inside the aperture of said printed wiring board and the aperture of said frame structure(The camera module(1), comprises a lens(103) and an image sensor(101) which are placed within both the aperture of the frame structure(102) and the aperture(201) of the printed circuit board(2). The top and bottom portions of the aperture of the frame structure(102) are placed on the aperture(201) of the printed circuit board(2), see figure 2a and 2b.).

Consider claim 8, Miyake et al. teach:

A printed wiring board(2) for installing a camera module("image pickup device", 1, figure 1, figures 2a and 2b. The camera module is comprised of a lens(103) and image sensor(101 and 101a).), wherein there is an aperture(201) in the printed wiring board(2), at least part of the camera module(1) can be placed through the aperture of the printed wiring board(see figures 1, 2a, and 2b), and contacts(104) between the camera module(1) and the printed wiring board(2) are arranged to form electrical contact when the camera module is in place(paragraph 0039).

Consider claim 9, Miyake et al. teach:

A printed wiring board(2) and a frame structure(102) connected to it for installing a camera module(1, paragraph 0038), wherein there is an aperture(201) in the printed wiring board(2, see figures 1, 2a and 2b), in addition, there is an aperture in the frame structure(The casing(102) is cylindrical(paragraph 0039), and forms an aperture that extends from the lens(103) to the image sensor(101), see figures 2a and 2b.), which is on the side placed against the printed wiring board(The bottom part of the aperture of casing(102) is on the side placed against the printed wiring board, see figures 2a and 2b.), and said apertures are placed in such a manner that at least a part of the camera module can be placed through the aperture of the frame structure to the aperture of the printed wiring board(The camera module(1) comprises a lens(103) and an image sensor(101) which are placed through the aperture of the frame structure(102) to the aperture(201) of the printed wiring board(2), see figures 2a and 2b.).

Consider claim 10, and as applied to claim 9 above, Miyake et al. further teach:

there are contacts(104) in the frame structure(102) for connecting the camera module(1, see figures 2a and 2b), which are placed on at least the side parallel to the direction of the printed wiring board(The contacts(104), are connected to the frame structure(102), and have top and bottom portions placed parallel to the direction of the printed wiring board, see figures 2a and 2b.),

Consider claim 11, Miyake et al. teach:

A frame structure("casing", 102, figures 2a and 2b) to be placed on a printed wiring board(2) for placing a camera module(The camera module comprises 103, 101, and 101a, figures 2a and 2b.), which frame structure(102) comprises at least contacts(104) for connecting the camera module, and an installation aperture on a first side for placing the camera module(An installation aperture is formed in the bottom of casing(102) for placing the camera module(101 and 101a.) in the frame structure(102, see figures 2a and 2b), wherein there is an aperture on the other side of the frame structure(102), which is in connection with the installation aperture(The casing contains the bottom aperture with the sensor(101 and 101a) of the camera module, and a top aperture with a lens(103), see figures 2a and 2b.).

Consider claim 12, and as applied to claim 11 above, Miyake et al. further teach:

the contacts(104) of the frame structure(102) are placed on at least the same side as the aperture(The contacts(104) are placed on the same side as the installation aperture, see figures 2a and 2b.)

Consider claim 13, and as applied to claim 12 above, Miyake et al. further teach the at least one contact is arranged to function as a clamping device for the camera module(The contacts(104) support the image pickup device(i.e. the contacts clamp the image pickup device to the circuit board(2), see paragraph 0038.).

Consider claim 17, and as applied to claim 11 above, Miyake et al. further teach: at least one contact is arranged to function as a clamping device for the camera module(The contacts(104) support the image pickup device(i.e. the contacts clamp the image pickup device to the circuit board(2), see paragraph 0038.).

Consider claim 14, Miyake et al. teach:

A camera module("image pickup device", 1, figure 1, figures 2a and 2b. The camera module is comprised of a lens(103) and image sensor(101 and 101a.) to be placed on a printed wiring board(circuit board, 2, figures 1, 2a and 2b), which camera module comprises at least an optics zone(See "casing", 102, paragraph 0039. The top portion of the casing in figures 2a and 2b, comprises the optics zone.), which comprises at least an input aperture(Lens, 103, is situated in the input aperture, paragraph 0039.)

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and a connector zone(The bottom portion of the casing, 102, forms the connector zone, see figures 2a and 2b.), which comprises at least contacts("lead portion", 104, paragraph 0039) for connecting the camera module to counter-contacts(A circuit board, 2, is "electrically connected" to the lead portion of the image pickup device, 1, paragraph 0039. Because the circuit board is electrically connected to the image pickup device, the leads of the image pickup device must be connected to counter contacts.), and, the direction of function, of which camera module is substantially the same as the direction of the input aperture from the connector zone(See figure 2b, the direction of function and direction of the input aperture are indicated with the downward arrow(6, paragraph 0039).), wherein the optics zone of the camera module can be placed at least partly through the printed wiring board(2, see figures 2a and 2b) and the contacts(104) are placed in the connector zone on at least one side parallel with the direction of function of the camera module(See figures 2a and 2b, the contacts(104) contain central portions which extend up and down, parallel with the direction of the function of the camera module.).

Conclusion


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2001/0050717, US 2001/0055073, US 2002/0163589, and US 2003/0146998 all disclose imaging elements situated on the opposite side of a substrate as the optical elements, the substrate containing an aperture.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC


NGOC-YEN VU
SUPERVISORY PATENT EXAMINER